

May 17, 2004  
Page 2

Serial No.: 09/927619  
Confirmation No.: 5353  
Applicant: PATEL et al.  
Atty. Ref.: 11836.0702.NPUS00

**AMENDMENTS TO THE CLAIMS:**

Please amend the specification as indicated below:

1. (Currently Amended) An invert emulsion drilling fluid comprising  
an oleaginous continuous phase  
a non-oleaginous discontinuous phase  
a polyglyceryl-2 diisostearate surfactant ~~selected from polyglyceryl-1-2 diisostearate  
or polyglyceryl-3 diisostearate~~, and  
a weighting agent.
2. (Cancelled)
3. (Canceled)
4. (Previously Amended) The drilling fluid of claim 1 wherein the oleaginous fluid is  
selected from diesel oil, mineral oil, synthetic oil, ester oils, glycerides of fatty acids, aliphatic  
esters, aliphatic ethers, aliphatic acetals, and combinations thereof.
5. (Original) The drilling fluid of claim 1 wherein the non-oleaginous phase is selected  
from fresh water, sea water, brine, aqueous solutions containing water soluble organic salts,  
water soluble alcohols or water soluble glycols or combinations thereof.
6. (Original) The drilling fluid of claim 1 wherein the weighting agent is a water soluble  
weighting agent or a water insoluble weighting agent or combinations thereof.

May 17, 2004  
Page 3

Serial No.: 09/927619  
Confirmation No.: 5353  
Applicant: PATEL et al.  
Atty. Ref.: 11836.0702.NPUS00

7. (Original) The drilling fluid of claim 6 wherein the water insoluble weighting agent is selected from barite, calcite, mullite, gallena, manganese oxides, iron oxides, or combinations thereof.

8. (Original) The drilling fluid of claim 6 wherein the water soluble weighting agent is selected from water soluble salts of zinc, iron, barium, calcium or combinations thereof.

9. (Canceled).

10. (Canceled)

11. (Canceled)

12. (Canceled)

13. (Canceled)

14. (Currently amended) A method of formulating an invert emulsion drilling fluid, said method comprising:

mixing an oleaginous fluid, a non-oleaginous fluid, a biodegradable surfactant and a weighting agent, wherein the biodegradable surfactant is selected from polyglyceryl-2 diisostearate or ~~polyglyceryl-3 diisostearate~~ in amounts sufficient to form an invert emulsion in which the oleaginous fluid is the continuous phase and the non-oleaginous fluid is the discontinuous phase.

15. (Cancelled)

May 17, 2004  
Page 4

Serial No.: 09/927619  
Confirmation No.: 5353  
Applicant: PATEL et al.  
Atty. Ref.: 11836.0702.NPUS00

16. (Cancelled)

17. (Previously presented) The method of claim 14 wherein the oleaginous fluid is selected from diesel oil, mineral oil, synthetic oil, ester oils, glycerides of fatty acids, aliphatic esters, aliphatic ethers, aliphatic acetals, and combinations thereof.

18. (Previously presented) The method of claim 14 wherein the non-oleaginous phase is selected from fresh water, sea water, brine, aqueous solutions containing water soluble organic salts, water soluble alcohols or water soluble glycols or combinations thereof.

19. (Previously presented) The method of claim 14 wherein the weighting agent is a water soluble weighting agent or a water insoluble weighting agent or combinations thereof.

20. (Previously presented) The method of claim 19 wherein the water insoluble weighting agent is selected from barite, calcite, mullite, gallena, manganese oxides, iron oxides, or combinations thereof.

21. (Previously presented) The method of claim 19 wherein the water soluble weighting agent is selected from water soluble salts of zinc, iron, barium, calcium or combinations thereof.

22. (Currently Amended) A method of drilling a subterranean hole with an invert emulsion drilling fluid, said method comprising:

mixing an oleaginous fluid, a non-oleaginous fluid, a biodegradable surfactant, and a weighting agent to form an invert emulsion, wherein the biodegradable surfactant is

May 17, 2004  
Page 5

Serial No.: 09/927619  
Confirmation No.: 5353  
Applicant: PATEL et al.  
Atty. Ref.: 11836.0702.NPUS00

~~selected from polyglyceryl-2 diisostearate or polyglyceryl-3 diisostearate~~ and wherein the biodegradable surfactant is in amounts sufficient to form an invert emulsion in which the oleaginous fluid is the continuous phase and the non-oleaginous fluid is the discontinuous phase, and

drilling said subterranean hole using said invert emulsion as the drilling fluid.

23. (Cancelled)

24. (Cancelled)

25. (Previously presented) The method of claim 22 wherein the oleaginous fluid is selected from diesel oil, mineral oil, synthetic oil, ester oils, glycerides of fatty acids, aliphatic esters, aliphatic ethers, aliphatic acetals, and combinations thereof.

26. (Previously presented) The method of claim 22 wherein the non-oleaginous phase is selected from fresh water, sea water, brine, aqueous solutions containing water soluble organic salts, water soluble alcohols or water soluble glycols or combinations thereof.

27. (Previously presented) The method of claim 22 wherein the weighting agent is a water soluble weighting agent or a water insoluble weighting agent or combinations thereof.

28. (Previously presented) The method of claim 27 wherein the water insoluble weighting agent is selected from barite, calcite, mullite, gallena, manganese oxides, iron oxides, or combinations thereof.

May 17, 2004  
Page 6

Serial No.: 09/927619  
Confirmation No.: 5353  
Applicant: PATEL et al.  
Atty. Ref.: 11836.0702.NPUS00

29. (Previously presented) The method of claim 27 wherein the water soluble weighting agent is selected from water soluble salts of zinc, iron, barium, calcium or combinations thereof.

30. (Canceled)

31. (Canceled)

32. (Currently Amended) A method of drilling a subterranean well with an invert emulsion drilling fluid, said method comprising:

mixing an oleaginous fluid, a non-oleaginous fluid, a biodegradable surfactant, and a weighting agent to form an invert emulsion, wherein the biodegradable surfactant ~~includes a fatty acid ester of diglycerol, wherein the fatty acid has the formula  $\text{RCO}_2\text{H}$  in which R is an alkyl or alkenyl having 10 to 20 carbon atoms and wherein the biodegradable surfactant is in amounts sufficient to form an invert emulsion in which the oleaginous fluid is the continuous phase and the non-oleaginous fluid is the discontinuous phase,~~

circulating said invert emulsion within said subterranean well and

drilling said subterranean well using said invert emulsion as the drilling fluid;

~~wherein the fatty acid ester of diglycerol is a di fatty acid ester and wherein the fatty acid ester of diglycerol the biodegradable surfactant is polyglyceryl-2 diisostearate.~~

33. (Cancelled)

34. (Cancelled)

35. (Canceled)